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# MULTI-PASS INTERFERENCE REDUCTION
# IN A GSM COMMUNICATION SYSTEM

## ABSTRACT

An iterative method (400) and apparatus (200) for a receiver for reducing
interference in a desired signal in a GSM communication system uses a finite-
impulse-response filter combined with alternate quadrature component output
selection for alternate linear equalization are disclosed The method includes inputting
a burst of data of a received waveform including interference, training an alternate
linear output filter with a midamble of known quadrature phase, providing an estimate
of the desired signal by operating on the received waveform with the finite-impulse-
response filter, generating log likelihood ratio estimates for a plurality of bits in the
burst of data, selecting bits from the burst of data base upon a predetermined
condition, and re-training the alternate linear output filter to provide a second
improved estimate of the desired signal.